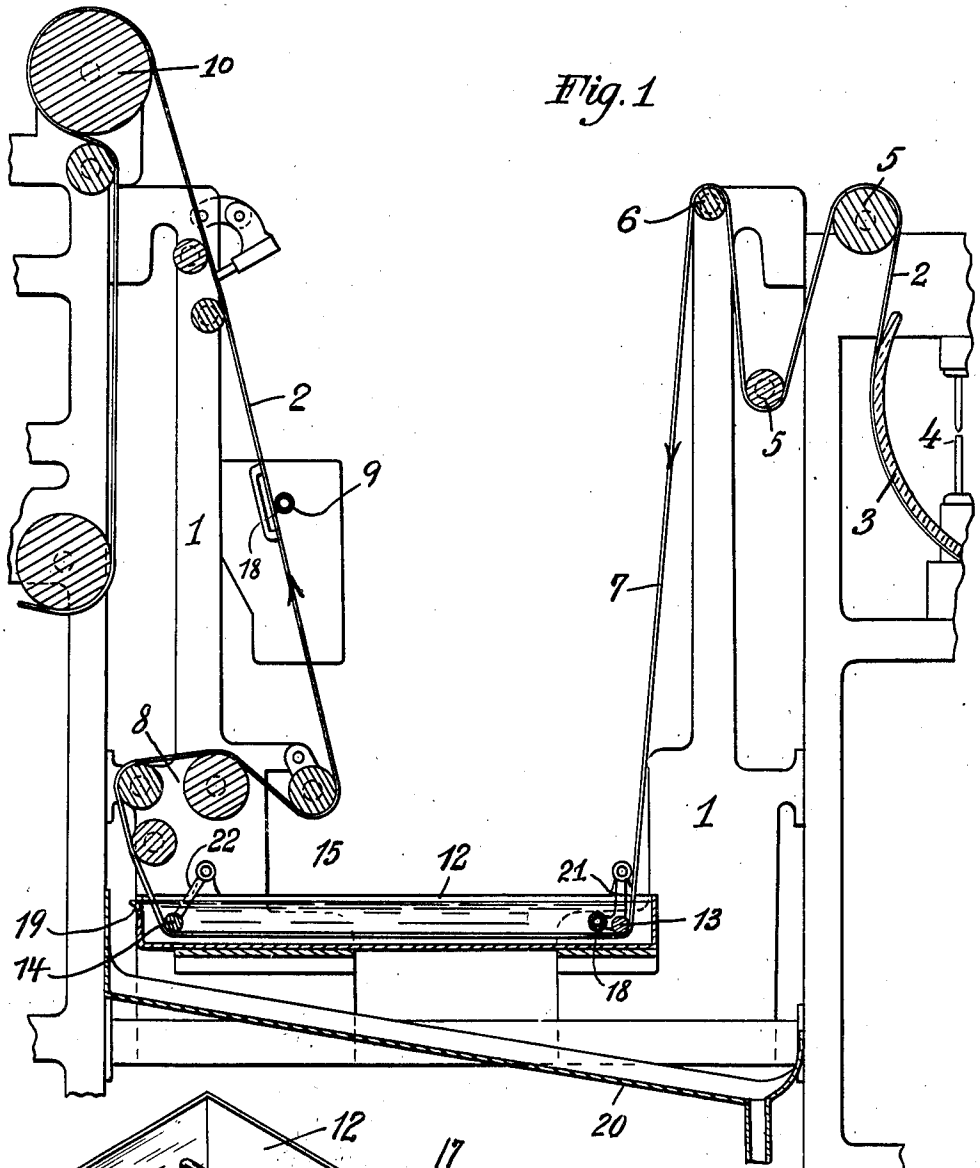
June 7, 1932. K. MURCK 1,861,607

BLUEPRINTING MACHINE

Filed Oct. 4, 1930

Fig. 1



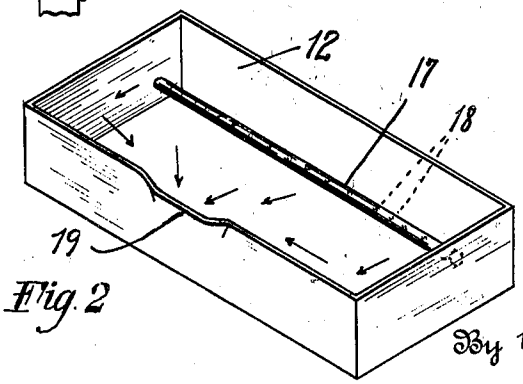


Fig. 2

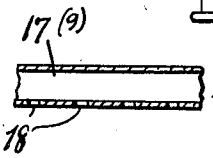


Fig. 3

Inventor

Knud Murck

By his Attorney

Joan E. A. Konigsberg

Patented June 7, 1932

1,861,607

UNITED STATES PATENT OFFICE

KNUD MURCK, OF FOREST HILLS, NEW YORK, ASSIGNOR TO CHARLES BRUNING COMPANY, INC., A CORPORATION OF NEW YORK

BLUE PRINTING MACHINE

Application filed October 4, 1930. Serial No. 486,309.

In a blue printing machine the prints are developed and washed by directing separate spaced jets of water against the print after it has been printed. The water dissolves the chemicals and washes the paper to develop the print, after which it is fixed and again washed and dried. Heretofore the washing means have been arranged in such a manner that the water runs over the paper for the purposes of washing and convenient disposal of the waste water. However, when prints with blue lines on white background are made this arrangement does not produce perfect prints because the water is directed against the paper in forceful separate spaced jets which, while they loosen the chemicals also carry the chemicals along and in contact with the print thereby producing streaks on the paper so that it is practically impossible to obtain prints having a perfect white background for the blue lines. In the industry it is said that the print bleeds. The present invention eliminates the first wash of the prints by the present means whereby the water runs with and on the paper as it travels through the machine and substitutes therefor an arrangement in which the paper is passed through a water bath containing running water and so arranged that as the paper passes through the water, the chemicals are floated off or lifted up from the paper and carried away.

The invention is embodied in a water tank adapted to be mounted on a blue printing machine as an attachment thereto in place of the usual means for washing the prints by streams or jets of water. In the accompanying drawing illustrating the invention Figure 1 is a diagrammatic representation of so much of a continuous blue printing machine as is necessary to understand the invention, parts being in section and parts broken away.

Figure 2 is a perspective view of the washing tank. Figure 3 is a sectional detail view of a water pipe.

Referring to the drawing the reference numeral 1 denotes the general frame work of the machine. The blue print paper 2 comes from a roll, not shown, passes behind the usual transparent printing plate 3 and up over suitable guiding rolls 5, 5 and 6. 4 indicates a source of light for printing purposes. All of these parts are of usual or standard arrangement and construction. Heretofore it has been the practice to provide a washing unit in the form of a pipe having spaced openings near the roll 6 and arranged to direct jets of water against the paper to run down over and parallel with the paper on its run 7. The idea being that all the chemicals would have been washed away from the paper when it reaches the bottom of the machine, after which the paper is run to and through the usual fixing unit 8 and thence upward past another similar washing unit until it finally passes around a suitable drying drum 10 and out of the machine.

In the present instance however, there is provided a tank 12 mounted near the bottom of the machine and containing two guide rolls 13 and 14, omitted in Figure 2. The paper passes around these rolls and thence to the fixing unit 8. The numeral 17 denotes a supply water pipe provided with a plurality of very fine openings 18 throughout its length whereby a constant supply of running water is provided for the tank 12. The pipe 17 and guide roll 13 may be mounted in swinging brackets 21, while the guide roll 14 is similarly carried by swinging brackets 22 affording means for lifting the rolls and the pipe out of the tank for cleaning purposes and for convenience in threading the paper through the machine.

The water fills the tray until it overflows for which provision is made in the form of a spout 19 located at the side opposite to that in which the water supply pipe is located. The tank is of such a depth that the paper is submerged in the water a substantial distance below the surface thereof and the spout is close to the top of the tank.

In operation the paper is threaded through the machine as shown and the water is turned on at 17 through a suitable flexible connection not shown until the tray is filled and the water begins to flow over through the spout 19. The machine is provided with an apron or tank 20 for carrying off the waste water. The printed paper passes through the tank 12 in which

the chemicals of the paper are floated off or lifted off by the water and carried away to the spout and out. The direction of the flow of water while the paper is passing through it is along the lines indicated by the arrows in Figure 2 and upwardly towards the spout. That is to say, by reason of the paper passing through the water and by reason of the steady running or bubbling supply of water coming from the pipe 17, the water in the tank is kept in constant gentle agitation and the chemicals are completely dissolved, lifted off from the paper and float away.

After having passed through the fixing unit 8 the paper is led upwards to the drying unit. On its upward run it is finally washed by water coming from a pipe 9 similar to the pipe 17. That is to say, instead of throwing the water against the paper, as heretofore, the water emerges through the small holes 18 in rather tiny streams which overlap to form a running laterally unbroken sheet of water the width of the paper.

The pipe 9 is placed closely adjacent to the paper to preclude the water being thrown against it. A washing attachment as herein disclosed produces pure white backgrounds and eliminates streaks or bleeding.

I claim:

In a blue printing machine means for developing the paper comprising a water bath through which the paper passes, water supplying means in said bath for producing a steady gentle flow of water therein parallel to and away from the paper from one side of the bath to the other side thereof and a final washing unit comprising a water supply pipe mounted closely adjacent to the path of the paper and provided with a plurality of closely spaced fine water exit holes whereby to provide a practically laterally unbroken sheet of water running parallel to the paper in a direction opposite to the travel thereof.

KNUD MURCK.